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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GEBRESILASSIE, KIBROM K

ART UNIT PAPER NUMBER

2128

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/693,484	Applicant(s) STEVENS ET AL.	
	Examiner Kibrom K. Gebresilassie	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/23/2003 & 08/18/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed on October 23, 2003.
2. Claim 1 is cancelled.
3. Claims 2-42 are examined.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on October 23, 2003 and August 18, 2004 are being considered.

Oath/Declaration

5. The Office acknowledges receipt of properly signed oath/declaration filed October 23, 2003.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 2, 12, 18, 22, 32, and 39 are rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter.

- a. Regarding Claims 2, 12, 18, 22, 32, and 39: The Examiner submits that, in view of the language of the claims, independent claims 2, 12, 18, 22, 32, and 39 do not appear to recite a concrete and tangible result. The examiner submits that in order to establish a practical application, there must be either a physical transformation, or a useful, concrete and tangible result. Data transformation is not the same as a physical transformation. In this instance, there does not

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appear to be a concrete and tangible result. Here, the method steps of creating an initial array of nodes, and adjusting initial arrays of nodes only results in "selecting" a path through adjusted array of nodes. This is simply an abstract idea resulting in an un-stored and un-applied, not a physical transformation. The claimed "selecting" a path through adjusted array of nodes, in this case, is a thought or computation, and not in and of itself a concrete and tangible result. It is not until the result is applied in a meaningful way that it has real world value and becomes a concrete and tangible result.

MPEP 2106 recites the following:

"A. Identify and Understand Any Practical Application Asserted for the Invention
The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and **tangible result**." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of **"real world" value**, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

Although the courts have yet to define the terms useful, concrete, and tangible in the context of the practical application requirement for purposes of these guidelines, the following examples illustrate claimed inventions that have a practical application because they produce useful, concrete, and tangible result:

- Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held to be directed to patentable subject matter because "the claimed process applies the Boolean principle to produce a useful, concrete, **tangible result** without pre-empting other uses of the mathematical principle." AT & T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999);

- "[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces a

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useful, concrete and tangible result' – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601; and

- Claims drawn to a rasterizer for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means were held to be directed to patentable subject matter since the claims defined "a specific machine to produce a useful, concrete, and tangible result." In re Alappat, 33 F.3d 1526, 1544, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994).

8. All dependent claims inherit the defects of the claims from which they depend.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 2, 12, 18, 22, 32, and 39 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 12, and 16 of U.S. Patent No. 6,678,876.

Although the conflicting claims are not identical, they are not patentably distinct from each other because all claims are directed to creating an initial array of nodes

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within a routing space, adjusting initial array of nodes, and selecting a path through adjusted array of nodes.

Claims 2, 12, and 16 of Patent No. 6,678,876 contain every element of claims 2, 12, and 18 of the instant application and anticipate the claims of the instant application. Claims of the instant application are not patently distinct from the earlier patent claims and as such are unpatentable over obvious-type double patenting. A later application claim is not patentably distinct from an earlier claim if the later claim is anticipated by the earlier claim.

11. Claims 22, 32, and 39 of the instant application are software version of Claims 2, 12, and 18. Therefore, the same rejection is applied as Claim 2, 12, and 18 of the instant application.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 2-42 are rejected under 35 U.S.C. 102(e) as being anticipated by US Publication No. US 2001/0038612 A1 issued to Vaughn et al.

Claim 2 (Previously presented):

Vaughn discloses a computer comprising:

means for creating an initial array of nodes within a routing space (such as ...*creating the circuit paths for connection*...;See: [0009] lines 6-9);

adjusting means for adjusting said initial array of nodes, including adjusting node between at least a pair of obstacles in said routing space (such as ...*routing the segments around obstacles*...;See: [0068] lines 15-18); and

means for selecting a path through said adjusted array of nodes (such as ...*storing the path routing*... ;See: [0068] lines 18-21).

Claim 3 (Previously presented):

Vaughn discloses the computer of claim 2, wherein said adjusting means comprises:

determining means for determining a number of paths that may pass between said pair of obstacles and means for adjusting a number of nodes between said pair of obstacles to be equal to said number of paths (See:[0157] lines 8-13).

Claim 4 (Previously presented):

Vaughn discloses the computer of claim 3, wherein said determining means determines a number of paths that may cross a line segment between said pair of obstacles (such as ...*calculate density tiles*; See: [0108] lines 1-8).

Claim 5 (Previously presented):

Vaughn discloses the computer of claim 2, wherein said adjusting means adjusts a number of nodes along a line segment between said pair of obstacles to be equal to a number of permissible paths between said pair of obstacles (See: [0109]).

Claim 6 (Previously presented):

Vaughn discloses the computer of claim 2, wherein said adjusting means adjusts locations of said nodes located between said pair of obstacles (such as *...the path segment is jogged or changed in direction in order to by pass the obstacle...*; See: [0182] lines 7-10).

Claim 7 (Previously presented):

Vaughn discloses the computer of claim 6, wherein said adjusting means further positions said nodes located between said pair of obstacles to correspond to permissible locations of paths between said obstacles (See: [0182] lines 4-10).

Claim 8 (Previously presented):

Vaughn discloses the computer of claim 2, wherein said adjusting means adjusts a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space (See: [0067] lines 9-13).

Claim 9 (Previously presented):

Vaughn discloses the computer of claim 2 further comprising linking means for linking said adjusted initial array of nodes (See: [0162] lines 1-6).

Claim 10 (Previously presented):

Vaughn discloses the computer of claim 9, wherein said linking means creates a link between each node in said array and nodes within a predetermined proximity of said each node without crossing any of said links (such as ...*the minimum spanning tree analysis connects the nodes in the net list without regarding to crowding or angles...*; See: [0104] lines 5-6).

Claim 11 (Previously presented):

Vaughn discloses the computer of claim 10, wherein said path traverses ones of said links (See: [0163] lines 10-15).

Claim 12 (Previously presented):

Vaughn discloses a computer comprising:

providing means for providing an array of linked nodes within said routing space, said array including a source node, a destination node, and a plurality of intermediate nodes (such as...*start node, interim node and target node...*;See; [0184]);
and

determining means for determining a path from said source node to said destination node through said linked nodes (See: Fig. 14G), wherein said determining means comprises:

creating means for iteratively creating a plurality of partial path, each said partial path extending to an intermediate node in said array (such as ...*interim node..*; See: [0180]);

means for determining a routing cost of each said partial path (such as ...*selects the shortest path...*; See: [0104]); and

means for discarding all of said partial paths that extend to one intermediate node except the partial path with the lowest routing cost if more than one partial path extends to said one intermediate node (such as ...*the minimum spanning tree analysis...*; See: [0113], [0114], Fig. 5 and Fig. 6).

Claim 13 (Previously presented):

Vaughn discloses the computer of claim 12, wherein said creating means creates a plurality of partial paths by creating initial paths from said source node to first nodes linked to said source node (See: Fig. 14G).

Claim 14 (Previously presented):

Vaughn discloses the computer of claim 13, wherein said creating means creates a plurality of partial paths (such as *interim nodes*; Fig. 14F and 14G) further by extending said initial paths from said first nodes to nodes linked to said first nodes (See: Fig. 15A).

Claim 15 (Previously presented):

Vaughn discloses the computer of claim 12, wherein said providing means further, for each node in said array, creates a link between said each node and nodes within a predetermined proximity of said each node without crossing any of said links (such as ...*the minimum spanning tree analysis connects the nodes in the net list without regarding to crowding or angles...*; See: [0104] lines 5-6).

Claim 16 (Previously presented):

Vaughn discloses the computer of claim 12, wherein said providing means further, for each node in said array, creates shortest links between said each node and nodes within a predetermined proximity of said each node without crossing any of said links (such as...*selects the shortest path connecting all five nodes...*; See: [0104] lines 1-9).

Claim 17 (Previously presented):

Vaughn discloses the computer of claim 12, wherein said providing means further:

selects one of said nodes of said array; creates a link to another node of said array that is within a predetermined distance of said selected node; and if said created link crosses another link, deletes a longest of said crossed links (See: [0113]).

Claim 18 (Previously presented):

Vaughn discloses a computer comprising:

creating means for creating an initial array of nodes within a routing space (such as ...*creating the circuit paths for connection...*; See: [0009] lines 6-9);

adjusting means for adjusting said initial array of nodes, including adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space (such as ...*routing the segments around obstacles...*; See: [0068] lines 15-18); and

selecting means for selecting a path through said adjusted array of nodes (such as ...*storing the path routing...* See: [0068] lines 18-21).

Claim 19 (Previously presented):

Vaughn discloses the computer of claim 18, wherein said adjusting means:
applies a force to said node, wherein a magnitude of said force corresponds to said proximity of said node to an obstacle, and moves said node in accordance with said force (such as ...*bypass obstacles*... See: [0170] and Fig. 13 C).

Claim 20 (Previously presented):

Vaughn discloses the computer of claim 18, wherein said adjusting means adjusts a location of each of at least one of said nodes in accordance with a proximity of said node to a plurality of said objects in said routing space (such as ...*routing the segments around obstacles*...; See: [0068] lines 15-18).

Claim 21 (Previously presented):

Vaughn discloses the computer of claim 20, wherein said adjusting means:
applies a plurality of forces to said node, wherein a magnitude of each of said plurality of corresponds to said proximity of said node to one of said plurality of obstacles; and moves said node in accordance with a sum of said plurality of forces (such as ...*bypass obstacles*... See: [0170] and Fig. 13 C).

Claim 22 (Previously presented):

This is a software version of the claimed system discussed above (Claim 2), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 23 (Previously presented):

This is a software version of the claimed system discussed above (Claim 3), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 24 (Previously presented):

This is a software version of the claimed system discussed above (Claim 4), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 25 (Previously presented):

This is a software version of the claimed system discussed above (Claim 5), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 26 (previously presented):

This is a software version of the claimed system discussed above (Claim 6), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 27 (Previously presented):

This is a software version of the claimed system discussed above (Claim 7), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 28 (Previously presented):

This is a software version of the claimed system discussed above (Claim 8), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 29 (Previously presented):

This is a software version of the claimed system discussed above (Claim 9), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 30 (Previously presented):

This is a software version of the claimed system discussed above (Claim 10), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 31 (Previously presented):

This is a software version of the claimed system discussed above (Claim 11), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 32 (Previously presented):

This is a software version of the claimed system discussed above (Claim 12), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 33 (Previously presented):

This is a software version of the claimed system discussed above (Claim 13), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 34 (Previously presented):

This is a software version of the claimed system discussed above (Claim 14), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 35 (Previously presented):

This is a software version of the claimed system discussed above (Claim 15), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 36 (Previously presented):

This is a software version of the claimed system discussed above (Claim 16), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 37 (Previously presented):

This is a software version of the claimed system discussed above (Claim 17), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 38 (Previously presented):

Vaughn discloses the media of claim 32, wherein said step of determining a routing cost of each said partial path comprises estimating a length of a path from said source node to said destination node through the intermediate node to which said partial path extends (such as ...*minimum length path*...; See: [0104] lines 12-17).

Claim 39 (Previously presented):

This is a software version of the claimed system discussed above (Claim 18), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 40 (Previously presented):

This is a software version of the claimed system discussed above (Claim 19), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 41 (Previously presented):

This is a software version of the claimed system discussed above (Claim 20), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Claim 42 (Previously presented):

This is a software version of the claimed system discussed above (Claim 21), wherein all claim limitations have been addressed ad/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Vaughn et al.

Conclusion

14. Claims 2-42 are rejected.
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
16. Any inquiring concerning this communication or earlier communication from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is (571) 272-8571. The examiner can normally be reached on Monday-Friday, 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Kamini S. Shah can be reached at (571) 272-2279. The official fax number is (571) 273-8300. Any inquiring of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is (571) 272-3700.

Kibrom K. Gebresilassie
Patent Examiner
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